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ABSTRACT

Data reported are part of a larger study investigating the antecedents of abuse and, more generally, parent-child interaction. Various personality and attitudinal variables were assessed prenatally and 3 months after the birth of the first child of 267 high-risk mothers. Four consistent factors emerged, two relating to personality variables, one relating to specific adjustment to pregnancy and motherhood, and one relating to an understanding of the psychological complexity of the mother's relationship to her child and level of ego functioning. These factors and various constructs, rationally derived from sets of variables, were analyzed for discriminatory power. While all four types of factors and several of the constructs seemed relevant in differentiating subsamples of mothers offering excellent care, inadequate care, and a random group, the Level of Personal Integration construct yields the strongest differentiation, suggesting this as an appropriate area for exploration in intervention in disturbance of child-rearing. In general, findings indicate that mothers who are young, lacking in understanding and awareness of the infant and their relationship to the infant, and who have a negative reaction to pregnancy and negative expectations regarding the infant are certainly at-risk for disturbances in caretaking. When increased anxiety and fear along with a suspicious and hostile nature are added to this complex the mother is at even greater risk for abuse and neglect. Ten pages of statistical tables are appended. (Author/MS)

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Maternal Personality and Attitude in Disturbances of Child-rearing

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Running head: Maternal Personality

Abstract

Various personality and attitudinal variables were assessed prenatally and 3 months after the birth of the first child of 267 high-risk mothers. Four consistent factors emerged, two relating to personality variables, one relating to specific adjustment to pregnancy and motherhood, and one relating to an understanding of the psychological complexity of the mother's relationship to her child and level of ego functioning. These factors and various constructs, rationally derived from sets of variables, were analyzed for discriminatory power. While all four types of factors and several of the constructs seemed relevant in differentiating subsamples of mothers offering excellent care, inadequate care, and a random group, the Level of Personal Integration construct yields the strongest differentiation, suggesting this as an appropriate area for exploration in intervention in disturbance of child-rearing.

Maternal Personality and Attitude in Disturbances of Child-rearing

As attention has focused on child abuse and neglect as a social and psychological as well as a medical problem, the importance of the causal role of parents' personality and attitude has become a major issue. The debate has considerable importance for clinicians who must treat both the children subject to physical and psychological abuse and neglect, and the parents or guardians identified as "perpetrators."

The early writing on the etiology of child abuse focused on the parents' personality, attitudes, and pathology as a cause of abuse, but with the current emphasis on interactive effects of parents and children (Bell, 1971) and the study of stress and poverty as a major contributor to abuse and neglect (Justice & Justice, 1976; Gil, 1976), there has been a move towards a multiple-factors model of the etiology of abuse and neglect (Spinetta & Rigler, 1972; Gelles, 1973). As these approaches have gained momentum, the personality of the parent has received less emphasis, and some have suggested (Alvy, 1975) that intervention should also reflect this shift in emphasis.

Yet there are studies which indicate some importance for parental personality and attitudinal variables; these variables have been shown to differentiate abuser from control groups on a post hoc basis in a number of studies. Paulson, Afifi, Chaleff, Thomaston, and Liev (1975) developed an MMPI abuse scale which differentiated control and abuse groups (although much validation work is needed); Spinetta (1978) used

the Michigan Screening Profile of Parents and was also able to differentiate abuse and control groups on such factors as tendency to become upset and angry, and inability to separate parental and child feelings. Disbrow, Doerr, and Caulfield (1977) include personality variables as an important element of their multivariate approach to predicting abuse.

The data reported here are part of a larger study investigating the antecedents of abuse and, more generally, parent-child interaction. The study adopts a longitudinal, at-risk approach combined with a prospective methodology, in which data are collected on a large group of "high-risk" parent-infant pairs beginning with testing of the mother in the 36th week of pregnancy. The study as a whole includes assessments at other times, but it is specifically the prenatal testing, which is repeated at 3 months after the child's birth, that is reported here. By adopting this approach the difficulties of post hoc testing are avoided (a problem which plagues almost the entire child abuse literature), and comparisons within the larger sample of various outcome groups are available.

It is our belief that abuse and neglect do indeed have a multiple etiology, and other papers (e.g., Egeland & Brunnquell, 1979) explore the multivariate view of the problem. While there is some question whether parental personality variables provide adequate prediction or explanation of the phenomena, specific attention to aspects of personality yield both theoretically important and clinically useful information. This is especially true in light of inclusion of variables which go beyond "traditional" personality constructs such as suspiciousness or impulsivity to include measures of the more integrative aspects of functioning.

Method

Subjects

The total sample represents 267 mother-infant pairs with father participating when possible, recruited from a public health infant and child-care clinic in a large midwestern city. To qualify for this care, all families must be in lower income brackets. The total sample had a mean age for mothers of 20.52 (s.d. = 3.65) years; 62% of the mothers were single at the time of the baby's birth. In each case this was the mother's first child. Sixty percent of the sample had completed high school at the time of the child's birth. Only data on mothers is presented here.

Four sub-groups of the total sample were formed. Group 1, the Excellent Care Group, represents 33 mothers who, based on observation by trained testers in the home, met the physical and emotional needs of the child exceptionally well, showing sensitive and cooperative handling of interactive situations and taking every opportunity to encourage the child's growth and development. Group 2, the Inadequate Care Group, includes 32 mothers who have shown some clear incident of abuse or neglect of the child in physical or emotional areas. Child protective services or social services from the Public Health Clinic were alerted to each of these situations, and at the time of this writing four cases are active in Child Protection files, with 11 closed cases; most other cases are receiving special Public Health Nurse followup or other social services. In each case some abuse or neglect is clear; cases not currently followed by Child Protection are equivalent on the Child Care Rating Scale

(Egeland & Deinard, Note 1; Egeland & Brunnquell, 1979) to those being followed by Child Protection. Group 3, a Random group, includes 31 mothers selected randomly from the total sample. Group 4, the "Matched" group, includes 32 mothers who are not in the Excellent or Inadequate Care groups who are matched to the Inadequate Care group on age, education, and marital status.

Instruments

In the 36th week of pregnancy various measures of personality and attitude were administered to the mothers. These were selected in an attempt to derive estimates of the following variables: intellectual level (Shipley-Hartford); emotional factors: aggression, defendance, impulsivity, succorance, infrequency, social desirability (Personality Research Form, Jackson, 1967); IPAT anxiety(Cattell & Scheier, 1963); locus of control (Rotter Scales, 1966); expectations about the baby (Neonatal Perceptions Inventory, Broussard, 1975); reactions to pregnancy (Pregnancy Research Questionnaire, Schaefer & Manheimer, 1960); and ability to handle interaction with an infant (Maternal Attitude Scales, Cohler, Weiss, & Grunebaum, 1970). The same measures, with the exception of the Shipley-Hartford, were repeated at 3 months.

The Neonatal Perception Inventory (NPI) measure is an attempt to evaluate level of expected ease of dealing with the baby. In its original form (Broussard, 1975) the scale derived difference scores based on expectations of one's own child compared to expectations of the average child. Our analysis of the data obtained on this scale (Brunnquell, Breitenbucher,Crichton, & Egeland, Note 2) showed that a more useful score for our purposes was simply the mean level of expected difficulty with babies

in general.

The Pregnancy Research Questionnaire investigates the mother's reactions to her pregnancy--her fear of physical difficulty, dependence on others, her irritability, and the extent of her desire for the pregnancy and positive feelings toward maternity. These are all attitudinal measures which were expected to relate to personality variables but to be largely independent of the broader personality.

The Cohler et al. (1970) scales used in this study (I. appropriate vs. inappropriate control of child's aggression; II. encouragement vs. discouragement of reciprocity; III. acceptance vs. denial of emotional complexity in child care) were selected for their emphasis on appropriateness of general attitudes toward child-rearing. They tap the developmental level and maturity of the mother in this new and difficult interpersonal situation, and would seem to fall somewhere between the specific reactions to pregnancy and the broader personality variables.

Data Analysis

To uncover the discriminatory and predictive power of both individiual variables and factors derived to organize the data for predictive and explanatory purposes, the following analyses were carried out for the prenatal and the three-month data separately:

1. Varimax factor analyses on the total sample;

2. One-way analyses of variance between Excellent Care, Inadequate Care, and Random groups with Student-Newman-Keuls tests for each significant analysis of variance;

3. Discriminant function analyses separating Excellent from Inadequate Care groups on factor scores and rationally derived constructs

(Impulsiveness; Anxiety; Level of Personal Integration; Maternal Expectations; General Personality);

4. Discriminant function analyses separating Inadequate Care from Matched Care groups on the same factor scores and rationally derived constructs;

5. Multiple discriminant function analyses (Excellent, Inadequate, and Random Criteria groups) using sets of mother factors.

Results

The principle factors analyses of the prenatal and three-month data sets for the total sample are presented in Tables 1 and 2, respectively. Varimax rotation yielded four interpretable factors from the prenatal data and six factors from the three-month data. While the order of the factors is slightly different, four factors reoccur: Impulsivity-Anxiety, Negative Reactions to Pregnancy, Psychological Complexity, and Hostility-Suspiciousness. The stability of these factors over time is noteworthy, especially given the major life change which has occurred for the mother in this period.

Each variable was subjected to a one-way analysis of variance, using the Excellent, Inadequate, and Random groups to test the variables' power in discriminating along the continuum of care provided to the children; the results are reported in Table 3. Seventeen of 37 analyses reach or exceed the .05 level of significance. The Student-Newman-Keuls post hoc test was performed following each significant result to examine differentiation of these groups from one another. The slash indicates differences between group means ($p < .05$) for the subgroups, listed low to high.

In order to use a maximization procedure such as discriminant function analysis, it was necessary to use some selection or simplification of the large number of variables to have an adequate subject to variable ratio. This was accomplished by using the factor scores derived from the prenatal and three-month factor analyses or an a priori grouping of test scores. Variables expected to relate to important constructs were placed together. The constructs tested and variables comprising each are: 1) Impulsiveness (Aggression, Impulsive-Anxiety, Locus of Control, and Tension); 2) General Anxiety (Defendence, Anxiety, Dependence, Baby Fear, and Tension); 3) Level of Personal Integration (Shipley-Hartford, Succorance, Anxiety, Locus of Control, Cohler II, and Dependence); 4) Maternal Expectations (Neonatal Perception Inventory, Cohler I, II,III, Desire for Pregnancy, and Maternal Feelings); and 5) General Personality (Defence, Impulsivity, Anxiety, Locus of Control, Dependence, and Tension). Discrimination using each of these constructs to predict membership in the Excellent and Inadequate Care groups was tested with the prenatal data and the three-month data; Table 4 presents the results. The overall correct classification rates ranged from 64.6% ($p = .018$) for the Prenatal Impulsiveness construct to 83.3% ($p = .0001$) for the three-month Level of Personal Integration construct compared with a base rate of 51% correct classification.

Since it was clear from other analyses that certain demographic variables yield significant differences between the Excellent and Inadequate Care groups (Egeland & Brunnquell, 1979), the five constructs were also used in discriminant function analyses with the Inadequate Care and a

Matched Care group as criterion groups. They were matched for age, education, and marital status. The results of the discriminant function analyses to predict membership in the Inadequate and Matched Care group for both the prenatal and three-month data are given in Table 5. Correct classification rates ranged from 59.4% ($p = .134$) for three-month General Anxiety measures to 79.7% ($p = .0001$) for the prenatal Level of Personal Integration measure.

The Personal Integration construct is the best discriminator at each period of testing (prenatal and three months) and for each group contrast (Inadequate vs. Excellent and Inadequate vs. Matched). There was not much of a loss in discriminating power when comparisons were made using the Matched Care group, except for the Maternal Expectation construct at three months. The percent of correct classification went from 76.9% for the Inadequate and Excellent Care groups comparison, to 67.2 in in Table 5 for the Inadequate and Matched Care groups comparison. The prenatal data best predicts group membership for the Inadequate vs. Matched Care groups and there was not much difference between prenatal and three-month data in predicting membership for the Inadequate and Excellent Care groups. It is somewhat surprising that the percentage of correct classification did not decrease very much for the Matched Care group as compared to the Excellent group.

The factors derived from the factor analyses of the prenatal and three-month data were used to discriminate the Inadequate Care group from each of the two contrast groups. Using the prenatal factors scores, the percent of correct classification for the Excellent and Inadequate Care groups was 73.8% ($p = .0001$) and the result for the Inadequate and Matched

Care groups was 67.2% ($p = .006$). Using three-month factor scores, the percent of correct classification for the Excellent and Inadequate groups was 74.2% ($p = .0001$) and for the Inadequate and Matched groups was 60.9% ($p = .08$). (See Table 6).

In predicting membership in the extreme groups (Excellent and Inadequate) prenatally, the psychological complexity factor is most important, but this is not the case when the Inadequate and Matched groups are used in the analyses. When age and education are controlled, mother's understanding of the complexities of her relationship with her infant (psychological complexity factor) is not important in predicting group membership, and instead the mother's Hostility/Suspiciousness score is the most important discriminator.

Using the two factor sets, a more difficult predictive task was undertaken with multiple discriminant function analyses carried out using the Excellent, Inadequate, and Random groups as the criterion groups. This analysis more closely approximates an actual prediction task used in screening. These results are presented in Table 7, and show the prenatal factors classify correctly at a 49.6% rate ($p = .0001$) given a 42% base rate. Fifty-nine percent of the Inadequate Care group are correctly identified but 21% of the Excellent Care group and 31% of the Random group are also placed with them. Using the three-month factors 52.4% are correctly classified ($p = .0001$) given the 30% base rate. The predicted Inadequate group contains 62% of the Inadequate cases plus 18% of the Excellent and 35% of the Random groups.

Discussion

In recent years a number of theoretical reviews of the child abuse literature have appeared which divide etiological speculation broadly into psychiatric, sociological, and psychosocial models. The data presented here relate clearly to the so-called psychiatric model in that they examine the personality characteristics of the abusing or neglecting parent. Originally, this model seemed to indicate that many abusers were "psychotic" or "neurotic" and the abuse was a clear and direct result of their emotional illness (e.g., Wooley & Evans, 1955). In the following years emphasis shifted to enduring "character traits" such as impulsivity and aggression (e.g., Kempe et al., 1962). As this has proved inadequate to explain abuse successfully (Gaines, Sandgrund, Green, & Power, 1978), some have suggested that such personality characteristics contribute relatively little to understanding of an intervention in abuse (Alvy, 1975). Spinetta (1978) has brought forward some evidence in favor of maintaining such variables in our conceptualizations of abuse. The data presented above, especially the broader areas of integration of the experiences of pregnancy and child-rearing into the mother's overall level and mode of functioning, seem to support the argument for continued attention to personality characteristics (in a broad sense) as a part of the phenomenon of abuse.

In looking at the different analyses and group comparisons, it is possible to identify maternal characteristics that are related to quality of caretaking. The results from the comparisons of the Excellent, Inadequate, and Matched Care groups on each of the prenatal and three-month

variables indicate that mothers who provide excellent care were of higher intelligence, had more positive expectations regarding their child and the ease of caring for their child, and they had a better understanding of their relationship with their child. There was no personality pattern or set of characteristics that seemed to be associated with the Excellent Care group. Perhaps what was most important was the mother's understanding of her relationship with her child as indicated by the high scores of the Excellent Care group on the Appropriate Control of Child's Aggression and Encouragement of Reciprocity Scales from the Maternal Attitude Scale. High scores on these scales indicate awareness of the difficulties and demands involved in being a parent and ability to accept the ambivalent feelings which accompany caretaking. Specifically, the mothers in the Excellent Care group were able to recognize the child's aggressive impulses, and modulate their expression rather than completely inhibiting them. They also were aware that infants are capable of establishing a relationship with their mother. The Inadequate Care group can be characterized by a lack of this knowledge and understanding of their infants and, based on their test scores from the Personality Research Form, they were more aggressive, suspicious, and tended to describe themselves negatively. At three months they had high anxiety scores.

When these personality and attitudinal variables obtained prenatally and at three months are factor analyzed, a clear and generally consistent factor structure emerges. While the three-month testing resulted in six

interpretable factors, the first four of those are quite close to the four factors of the prenatal testing, and account for 78% of the common variance in the three-month testing. The four factors found in both the prenatal and three-month data sets seem to be divided into groups. The first of these represents traditional personality variables: Prenatal Factor I and three-month Factor IV relate to Anxious/Impulsive tendencies. In contrast, the other factors related more closely to specific reactions to pregnancy and child-rearing.

The two factors relating to more specific reactions to pregnancy and child-rearing were consistent in both data sets, with Prenatal Factor II and three-month Factor I relating to negative reactions to pregnancy, irritability, and fear for one's own health. Factor III in each data set, given the name Psychological Complexity, loads primarily on the three scales from the Maternal Attitude Scale and, as indicated above, these scales relate to the mother-child situation in terms of the psychological maturity and sophistication necessary to adequate parent-child relations. A high score on this factor implies a certain integrity of ego functioning which subsumes many aspects of personality. This factor certainly reflects intellectual ability and general comprehension, but goes beyond this to include the ability to deal effectively with the ambivalent and stressful affect inherent in a first pregnancy. We see here the moderation of these difficult feelings by ego-functioning, identified in Factor III as independent of other personality variables.

The utility of the Psychological Complexity factor and, to a lesser extent, the Negative Reactions to Pregnancy factor in differentiating disturbed parent-child relationships from more positive relations becomes clear in the discriminant function analyses. It is interesting to note that the factors representing the personality variables were most important in discriminating the Inadequate and Matched groups, particularly at three months. As would be expected, the Psychological Complexity factor is related to age and education and, as a consequence, is less important when discriminating mothers in the Matched Care group. It appears that the mothers in the Excellent Care group have a positive reaction to pregnancy, and knowledge and understanding regarding children and their relationship to their children. However, a low score alone on these two factors does not necessarily mean that the mother will mistreat her child. Rather, a low score on the Psychological Complexity and Negative Reaction to Pregnancy factors, along with a high score on the Hostile/Suspicious factor, increases the risk of abuse and neglect taking place.

The increased importance of the Hostile/Suspicious factor in predicting group membership at three months coincides with an increase in this factor score between the prenatal and three-month testing for the Inadequate Care group. There were specific increases

for this group on the mean Aggression, Defendence, and Anxiety scores between prenatal and three-month testing which may reflect the difficulty the baby is presenting for these mothers. Thus, the mother who abuses or neglects her child lacks understanding and knowledge and has a negative reaction to pregnancy. After the baby arrives, her anxiety and fear increase and she responds by becoming more hostile and suspicious, all of which interfere with her ability to relate to the baby and cope with the demands of the situation. When a mother shows an increase in anxiety after delivery, and responds in a hostile and suspicious fashion, she should be considered high-risk for abuse and given special attention.

The results from the discriminant analyses using various combinations of variables further supports this characterization and suggests even more specifically which variables describe the characteristics of the mother who mistreats her child. The Personality Integration construct, which is highly related to Factor III, is most important in predicting group membership, regardless of time of testing or group comparisons. This construct emphasizes integration of the mother's experience of pregnancy and child-rearing into her overall world view and personality organization. The more traditional variables, such as impulsivity, do not seem to be closely related to quality of caretaking. It seems, then, that the integrative variables are a more appropriate focus of clinical attention.

The variables used in the Level of Personal Integration construct represent an amalgam of affective and intellectual elements. The Shipley-Hartford is a measure of intellectual ability. Anxiety is included as an indicator of the ability to deal with affect aroused by day-to-day situations and Locus-of-control is included as an important element of a mature, balanced perception of self and world. The PRF Succorance and PRQ Dependence Measures are included as a measure of the mother's own psychological needs and her ability both to have these needs under control when necessary and to find ways to meet these needs. Finally, the Cohler Scale II, which focuses on the appropriateness of the mother's attitude towards encouraging reciprocity, is included as a measure which reflects the mother's ability to recognize her own complex relationship to a child who is dependent but requires increasing autonomy. Each of these variables contribute to the overall conception of the mother's recognition of her own psychological needs and processes, her ability to perceive those needs and processes in others, and her ability to integrate both sets of needs and processes.

Central to the construct, called here Personal Integration, are a maturity and self-concept which allows understanding of both one's own and others' feelings. As such, some minimal level of intellectual functioning is required, and intelligence makes it easier to make the complex interpersonal perceptions required to function in a personally integrated

way. But we are dealing with a much broader concept which involves emotional stability and experience. The mothers in the Inadequate Care group are almost all intellectually capable of child care. We are not then dealing simply with a matter of skills or information.

The Personal Integration construct suggests an inability to perceive and integrate their own feelings about themselves, others, and the world about them as a salient factor. While age and education are in general important variables for the mature functioning necessary to adequate child care, these are clearly not enough to explain the difficulties in child-rearing experienced by the mothers in our Inadequate Care group. Even matching for age and education, the Level of Personal Integration construct proved to be highly predictive, in fact only slightly less powerful than a much easier Excellent vs. Inadequate Care group discrimination.

The underlying variable tapped by the Personal Integation Construct certainly cannot be changed simply by providing information or skills training, or by therapy aimed at specific behavioral patterns such as impulsivity. Rather it is through integration of the experiences of child-rearing and relating to others, for example to a concerned worker with adequate time to provide care for both mother's and child's condition, that such change has even the possibility of taking place.

The implications of these findings suggest that "integration" of experience is important for identification of risk situations and as a focus of intervention. This implies dealing with the specifics of the mother's reactions, feelings, and perception of the day-to-day tasks she faces with the child: How does she feel about feeding, changing, crying spells, being

unable to calm the baby? How much control does she attribute to the child in such situations, and how much to herself? Is she aware of her own emotional state and its effects on the baby? Asking about the mother's notion of what the baby's motivation is provides an excellent means for highlighting the mother's own needs in the situation and her understanding of the interactive nature of their behavior as a pair. The mother who sees her daughter's not eating as the child trying to get back at her shows a serious lack of understanding.

The mother needs to be made aware that newborns are capable of responding and interacting with the caretaker. However, the mother also needs to understand the complexity and subtlety of the infant's behavior. Just demonstrating that a newborn is capable of responding to various kinds of stimulation is not, however, sufficient, for it does not truly provide for the mother's integration of her own experiences and needs around the development of her relationship with her infant. The mother must recognize her ambivalent feelings which of necessity are associated with pregnancy, birth, and early care. The mother who answers the question, "What's the worst thing your child can do" by saying "Nothing" is not dealing with ambivalence. These things do not change in one class or discussion session; like almost any intervention, this requires time, energy, repeated working through, and an emotional commitment on the part of the interviewer that communicates to the mother the value and importance of her own feelings. Such commitment and energy are of paramount importance in effective intervention for the type of variable we are describing here.

We are describing here not a training in child-care techniques (though at times that too may be important), but rather an intervention aimed at an increase in awareness of one's own and other persons' (specifically the baby's) feelings. It is far easier to teach a specific skill (e.g., feeding techniques), but such an approach does not meet the real needs of a mother having difficulty with her child. It may in fact be the case that such knowledge-oriented classes are effective (like so much of teaching) to the extent they touch the more affectively laden issues for the student; that is, the skill issues may in fact be tangential to the more central issue of the mother's emotional readiness to provide nurturance to another person. This argues for a therapeutic rather than a classroom approach to intervention in disturbance of child-rearing and prevention of such disturbance.

Other investigations have recently focused on variables similar to what we call personal integration. Newberger (1979) talks about "developmental levels of parental consciousness" and its importance in understanding abuse. The levels of parental awareness range from "egoistic" (parent understands child as a projection of self) to "process orientation" (parent understands child as a separate, complex, and changing self system). Walcer (1979) provides evidence for the relationship between a similar variable (ego development) and successful outcomes in an intervention program. In summary, the maternal variables assessed are important in disturbances of child rearing, even though they are by no means the only or major determinant of such disturbances (see Egeland & Brunnquell, 1979). While

none of the specific variables, factors, or constructs alone nor all of them together can be considered adequate predictors of abuse or neglect, they are significant contributors to the phenomenon. More useful than traditionally conceived variables such as impulsivity, dependence, aggressiveness, or hostility are variables focusing on integration of the specific experiences of pregnancy and early child-rearing into the mother's overall experiences. Mothers who are young, lacking in understanding and awareness of the infant and their relationship to the infant, and have a negative reaction to pregnancy and negative expectations regarding the infant are certainly at-risk for disturbances in caretaking. Add to this complex increased anxiety and fear along with a suspicious and hostile nature, and the mother is at even greater risk for abuse and neglect.

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Table 1

Item Statistics and Factor Loading Matrix of Mother's Prenatal Test Data

Variables	X	sd	N	Impulsive/ Anxious Factor I	Negative Reaction to Pregnancy Factor II	Psychological Complexity Factor III	Hostile/ Suspicious Factor IV	h^2
Shipley-Hartford	25.74	6.27	261	-.14	.03	.58	-.06	.36
PRF-Aggression	7.03	3.26	261	.33	.06	.03	.68	.58
PRF-Defendence	6.12	2.84	261	.18	.11	-.18	.58	.41
PRF-Impulsivity	6.13	3.23	261	.55	.06	.02	.25	.36
PRF-Succorance	8.62	3.31	261	.05	.10	-.19	.16	.07
PRF-Infrequent	.28	.62	261	.07	-.08	-.14	.09	.04
PRF-Social desirability	10.14	2.86	261	-.80	-.22	.12	-.08	.71
IPAT (anxiety)	33.78	11.69	258	.69	.32	-.02	.42	.75
External locus of control	5.37	2.44	260	.31	.04	-.07	.06	.11
Broussard	.96	2.03	258	.09	.02	-.25	-.03	.07

Table 1 (cont.)

Item Statistics and Factor Loading Matrix of Mother's Prenatal Test Data

Variables	X	sd	N	Factor I	Factor II	Factor III	Factor IV	h^2
Cohler I	31.49	5.82	259	.10	-.12	.50	-.13	.29
Cohler II	36.97	7.17	260	-.09	-.38	.61	-.02	.52
Cohler III	38.55	6.29	260	.10	.05	.63	-.01	.40
PRQ Fear for self	5.55	1.57	260	.02	.72	-.08	.10	.53
PRQ Desire for pregnancy*	14.18	4.53	260	.17	.33	.18	-.09	.18
PRQ Dependence	9.03	1.84	260	-.08	.27	-.19	.06	.12
PRQ Fear for baby	16.24	3.76	260	.07	.58	-.11	.15	.38
PRQ Maternal feelings	12.72	2.86	259	.14	.28	-.03	-.02	.10
PRQ Irritability	29.66	5.22	259	.29	.53	.06	.12	.38
% Common Variance				51	24	16	9	

* high score indicates low desire for pregnancy

Table 2

Item Statistics and Factor Loading Matrix of Three-Month Mother Data

Variables	$\bar{X}$	sd	N	Negative Reactions to Pregnancy Factor I	Hostile/ Suspicious Factor II	Psychological Complexity Factor III	Impulsive/ Anxious Factor IV	Low Desire for Motherhood Factor V	Dependence Factor VI	h^2
PRF-Aggression	7.49	3.43	232	.20	.75	-.02	.22	.19	.14	.71
PRF-Defendence	6.56	3.27	232	.28	.64	-.16	.04	.05	.21	.56
PRF-Impulsivity	6.27	3.19	232	.19	.24	-.02	.53	.03	.12	.39
PRF-Succorance	8.45	3.46	232	.00	.03	-.17	.00	-.07	.56	.34
PRF-Infrequent	.23	.63	232	-.00	.08	-.25	.11	.03	.06	.09
PRF-Social desirability	10.35	3.17	232	-.58	-.22	.03	-.36	-.08	-.11	.53
IPAT (anxiety)	34.16	11.46	232	.58	.38	-.01	.44	.10	.31	.78
External locus of control	5.30	2.60	230	.03	-.01	.01	.59	.00	-.09	.35
Broussard	1.78	2.75	232	-.03	.04	-.16	-.03	-.09	-.01	.04

Table 2 (cont.)

Item Statistics and Factor Loading Matrix of Three-Month Mother Data

Variables	$\bar{X}$	sd	N	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI	h^2
Cohler I	31.67	6.70	232	-.10	-.03	.53	.10	-.04	-.17	.33
Cohler II	38.22	7.83	232	-.24	-.14	.46	-.01	-.35	-.06	.42
Cohler III	37.90	7.81	232	-.06	.11	.68	-.03	-.05	-.01	.49
PRQ Fear for self	5.86	1.74	221	.55	.08	-.09	-.00	.24	-.03	.38
PRQ Desire for Pregnancy*	14.10	4.79	222	.24	.10	.11	-.18	.42	-.03	.29
PRQ Dependence	9.34	1.84	222	.05	.18	-.02	.02	.14	.44	.25
PRQ Fear for baby	14.91	3.17	222	.50	.28	-.22	.00	-.01	-.12	.39
PRQ Maternal feelings	12.49	2.75	222	.14	.08	-.14	.15	.51	.07	.34
PRQ Irritability	25.15	3.85	208	.60	.05	.09	.12	.32	.16	.51
% Common Variance				20	26	17	15	11	11	

* high score indicates low desire for pregnancy

Table 3

Significant One-Way Analyses of Variance for Prenatal and Three-Month Variables*

Variable	Group 1 Excellent Care		Group 2 Inadequate Care		Group 3 Random				
Prenatal	Mean	S.D.	Mean	S.D.	Mean	S.D.	F	p	Student-Newman-Keuls
Shipley-Hartford**	29.18	5.31	22.38	5.85	25.48	5.40	12.38	.0000	Group2/Group 3/ Group 1
PRF Aggression	6.30	2.98	8.41	3.60	6.68	3.39	3.66	.0295	Groups 1 & 3/Group 2
PRF Defendence	5.73	2.93	7.38	3.07	5.48	3.06	3.70	.0284	Groups 1 & 3/Group 2
PRF Social Desirability	10.91	2.98	8.81	3.00	10.35	2.96	4.29	.0166	Groups 1 & 3/Group 2
IPAT Anxiety	31.24	11.52	38.42	12.98	32.10	12.60	3.14	.0479	Groups 1 & 2 & 3
Broussard	20.76	2.01	17.97	2.32	18.21	5.50	5.89	.0039	Groups 1/Groups 2 & 3
Cohler I	32.58	6.23	29.13	5.51	31.07	4.89	3.10	.0496	Groups 1 & 3/ Groups 2 & 3
Cohler II	40.18	6.42	31.81	7.35	38.33	7.88	11.93	.0000	Groups 1 & 3/Group 2

Table 3 (cont.)

Significant One-Way Analyses of Variance for Prenatal and Three-Month Variables*

	Group 1		Group 2		Group 3				
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D.	F	p	Student-Newman-Keuls
3-Month									
PRF Aggression	6.36	3.38	9.28	3.45	7.47	3.17	5.98	.0036	Groups 1 & 3/Group 2
PRF Defendence	5.79	2.85	8.45	4.06	7.42	2.95	5.22	.0071	Group 1/Groups 2 & 3
PRF Social Desirability	11.00	3.55	8.83	3.31	9.55	3.60	3.14	.0480	Groups 1 & 3/Groups 2 & 3
IPAT Anxiety	30.30	11.73	41.14	11.49	34.67	10.74	7.14	.0013	Groups 1 & 3/Group 2
Broussard	21.79	2.34	17.36	6.06	17.88	7.91	5.29	.0065	Group 1/Groups 2 & 3
Cohler I	34.30	6.96	29.07	5.77	29.83	6.62	6.10	.0032	Group 1/Groups 2 & 3
Cohler II	42.42	7.46	33.66	7.96	37.06	8.02	10.02	.0001	Group 1/Groups 2 & 3
PRQ Dependency	8.78	2.03	9.89	1.60	9.83	1.66	3.94	.0227	Group 1/Groups 2 & 3
PRQ Baby Fear	14.44	2.87	17.00	3.25	14.67	2.92	6.59	.0021	Groups 1 & 3/Group 2

*17 of 37 analyses reached p < .05 level of F probability

**given only prenatally

Table 4

Discriminant Function Analyses:

Excellent vs. Inadequate Mother Groups

Analysis	% Correct classification (p-level)	Wilks Lambda (p-level)	Highest discriminant weights
Prenatal data:			
Impulsiveness	64.6 (.018)	.806 (.025)	internal locus, aggression, anxiety
General Anxiety	69.2 (.002)	.840 (.066)	dependence, anxiety, irritability
Personal Integration	81.3 (.001)	.556 (.001)	succorance, Shipley, Cohler II
Maternal Expectation	76.9 (.001)	.613 (.001)	NPI level, Cohler II, low anxiety
General Personality	66.2 (.009)	.801 (.041)	anxiety, internal locus, dependence
3-month data:			
Impulsiveness	72.3 (.001)	.697 (.002)	anxiety, internal locus
General Anxiety	66.2 (.009)	.705 (.006)	fear for baby, anxiety, dependence
Personal Integration	83.3 (.001)	.533 (.001)	Cohler II, low anxiety, succorance
Maternal Expectations	78.5 (.001)	.572 (.001)	Cohler II, NPI level, low Cohler III
General Personality	67.7 (.004)	.661 (.001)	anxiety, internal locus, dependence

Table 5

Discriminant Function Analyses:

Inadequate vs. Matched Mother Groups

Analysis	% Correct classification (p-level)	Wilks Lambda (p-level)	Highest discriminant weights
Prenatal data:			
Impulsiveness	64.1 (.021)	.772 (.011)	internal locus, anxiety, aggression
General Anxiety	71.9 (.0001)	.864 (.214)	anxiety, dependence
Personal Integration	79.7 (.0001)	.654 (.000)	low anxiety, succorance, external locus
Maternal Expectations	62.5 (.046)	.938 (.724)	low Cohler III, Cohler II, low desire for pregnancy, NPI
General Personality	68.8 (.003)	.767 (.009)	internal locus, anxiety, dependence
3-month data:			
Impulsiveness	62.5 (.046)	.842 (.187)	internal locus
General Anxiety	59.4 (.134)	.849 (.212)	defendence, fear for baby
Personal Integration	67.2 (.006)	.774 (.048)	low anxiety, external locus, succorance, Cohler II
Maternal Expectations	67.2 (.006)	.757 (.063)	NPI level, low Cohler III, low desire for pregnancy
General Personality	65.6 (.012)	.840 (.179)	internal locus, anxiety

Table 6

Discriminant Function Analyses using Prenatal and Three-Month Factor Scores: Inadequate vs. Excellent and Inadequate vs. Matched Care Groups

Analysis	% Correct classification (p-level)	Wilks Lambda (p-level)	Highest Discriminant Weights
Excellent vs. Inadequate Care Group:			
Prenatal data	73.8 (.000)	.717 (.00)	low psychological complexity, negative reactions to pregnancy
3-Month data	74.2 (.000)	.660 (.00)	hostile/suspicious, negative reactions to pregnancy, low desire for motherhood low psychological complexity
Matched vs. Inadequate Care Group:			
Prenatal Data	67.2 (.006)	.944 (.49)	hostile/suspicious negative reactions to pregnancy
3-Month Data	60.9 (.08)	.861 (.18)	hostile/suspicious low psychological complexity negative reactions to pregnancy

Table 7

Multiple Discriminant Function Analyses using Prenatal and Three-Month Factor Scores

	Standardized Discriminant Weights			
Factors	Prenatal		3-Month	
	1	2	1	2
Impulsive/Anxious	.36	-.36	.03	-.38
Negative Reactions	.35	-.60	-.47	-.70
Psychological Complexity	-.83	-.66	.50	-.14
Hostile/Suspicious	.36	-.20	-.65	.12
Low Maternal Desire	--	--	-.34	.24
Dependence	--	--	-.11	.57
Centroids				
1 - Excellent	-.65	-.07	.69	-.13
2 - Inadequate	.63	-.08	-.73	-.15
3 - Random	.02	.10	-.03	.21
Wilks Lambda	.797	.992	.743	.971
(p-level)	(.002)	(.83)	(.003)	(.71)
% Correct Classification	49.6		52.4	
(p-level)	(.000)		(.000)	

TABLE 5

SUMMARY OF ANOVAs OF SEX ROLE SCORES IN STUDY 2

BY CHILD SEX BY AGE GROUP BY INCOME LEVEL: *Fs*, *ps*, *dfs*

Source of variation	df	DAP	OPT	NRT	TPT	BIT	Composite
Age (A)	2	1.07	1.76	0.90	0.10	0.52	0 59
Sex (B)	1	181.17**	181.54**	47.26**	180.38**	235.13**	716.58**
School type (C)	1	0.00	0.50	2.67	1.76	0.06	0.08
A x B	2	0.85	2.77	3.50*	12.05**	7.15**	8.38**
A x C	2	0.10	1.20	1.80	0.01	0.12	0.28
B x C	1	0.73	2.31	0.07	0.03	0.21	0.28
A x B x C	2	0.42	0.51	0.38	2.21	0.27	1.27
Residual *df*		276	203	231	320	323	325
Residual *MS*		0.15	1.58	0.25	5.53	329.98	0.15

*$p < .05$.

**$p < .001$